EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Sociology, Psychology & Religious Studies
Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

Prevalence of Burnout, Compassion Fatigue and Compassion Satisfaction among Critical Care Nurses at Kenyatta National Hospital

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Accepted: 23 March 2025 || Published: 23 April 2025

Abstract

Purpose: Critical care nurses (CCNs) should have a supportive work environment to prevent burnout syndrome (BOS) and compassion fatigue (CF). However, Kenyatta National Hospital (KNH) nurses face high levels of BOS and CF due to overwhelming workloads, patient suffering, and inadequate institutional support. This study aims to examine the prevalence of burnout, compassion fatigue, and CS among KNH CCNs, providing insights to inform policy interventions and institutional strategies to support nurse well-being.

Methods: This randomized controlled trial at KNH's Critical Care Unit explored burnout, compassion fatigue, and satisfaction among 156 randomly selected critical care nurses. Data collection utilized the Professional Quality of Life questionnaire. Statistical analysis included descriptive statistics, independent t-tests, and Pearson's correlation analysis, using a p-value of <0.05 for significance. Ethical approval was granted by the KNH-UoN Ethics and Research Committee, Daystar University Ethics Board, and informed consent was obtained from participants.

Results: Findings revealed that 33% of CCNs experienced moderate to high levels of burnout, with the highest prevalence among nurses with fewer than two years of experience (M = 28.5, SD = 9.3). Compassion fatigue was prevalent, with 76.2% reporting moderate levels. In contrast, compassion satisfaction was relatively high (M = 39.8, SD = 4.9), particularly among nurses with more than five years in their current position (M = 40.9, SD = 4.3, p = .015). Employment status significantly influenced both burnout and CS levels, with temporary nurses experiencing higher burnout and lower CS.

Implications: Burnout and compassion fatigue are common among critical care nurses, especially early-career and temporary staff, while experienced nurses benefit from compassion satisfaction. Institutional measures, such as mental health programs, improved nurse-to-patient ratios, permanent employment, and resilience training in nursing curricula, are essential. The Ministry of Health should create policies to reduce workloads, and further research is needed to evaluate workplace interventions for better nurse well-being and patient care.

Keywords: *Burnout, compassion fatigue, compassion satisfaction, critical care nurses, Kenyatta National Hospital*

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Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

How to Cite: Murithi, J., Mbwayo, A., & Boyo, B. (2025). Prevalence of Burnout, Compassion Fatigue and Compassion Satisfaction among Critical Care Nurses at Kenyatta National Hospital. *Journal of Sociology, Psychology and Religious Studies*, *5*(1), 38-54.

1. Introduction

Burnout, compassion fatigue, and compassion satisfaction are three interrelated constructs that significantly impact the well-being of healthcare professionals, particularly critical care nurses. Burnout syndrome (BOS) is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment due to prolonged exposure to work-related stress (Maslach & Leiter, 2016). Indicators of burnout include chronic fatigue, irritability, cynicism towards patients, reduced professional efficacy, and increased absenteeism (Shirom, 2011). These symptoms often lead to job dissatisfaction, increased turnover rates, and reduced quality of patient care (Wan et al., 2022).

Compassion fatigue (CF), often used interchangeably with secondary traumatic stress, arises from repeated exposure to patients' suffering, leading to emotional depletion and a reduced capacity for empathy (Figley, 2002). It is marked by symptoms such as emotional exhaustion, intrusive thoughts, sleep disturbances, hypervigilance, avoidance behaviours, and diminished ability to feel empathy (Stamm, 2011). CF is particularly prevalent in high-stress healthcare environments where nurses routinely care for critically ill or dying patients (Dominguez-Gomez & Rutledge, 2009). Compassion satisfaction (CS) refers to the positive emotional fulfilment derived from helping others and contributing to their well-being (Stamm, 2011). Measurable characteristics of CS include a sense of professional achievement, job satisfaction, increased motivation, and a positive self-view regarding one's ability to make a meaningful impact (Todaro-Franceschi, 2024). High levels of CS have been linked to increased resilience, job retention, and improved patient care outcomes (Xie et al., 2021).

Due to the critical role of CCU nurses in providing intensive patient care, assessing the prevalence of burnout, compassion fatigue, and compassion satisfaction is fundamental to identifying gaps in workplace well-being and making informed evidence-based interventions. Understanding these psychological constructs is essential in evaluating the mental health challenges that critical care nurses face in high-pressure environments such as intensive care units (ICUs) and critical care units (CCUs). This study, therefore, seeks to establish the extent of these psychological challenges among CCU nurses at Kenyatta National Hospital (KNH), thereby laying the foundation for targeted policy recommendations and institutional support mechanisms.

Recent research highlights the importance of compassion satisfaction in mitigating their adverse effects. In the United States, studies have shown that nurses who show higher levels of compassion satisfaction demonstrate greater resilience and job retention (Xie et al., 2021). Similarly, research in Canada, indicates that ICU nurses with strong support systems and positive patient interactions tend to experience increased compassion satisfaction, which serves as a protective factor against emotional exhaustion (Wan et al., 2022). In Europe, a UK-based study found that nurses with a strong sense of professional purpose and workplace recognition reported higher compassion satisfaction, contributing to improved patient outcomes and overall well-being (De Kock et al., 2022). In France, compassion satisfaction was notably higher among nurses in institutions that implemented mental health support programs and peer debriefing sessions (Asiri, 2021).

The prevalence of BOS and CF among healthcare workers, particularly nurses, has been the subject of extensive research globally. Studies conducted in North America and Europe indicate that burnout is alarmingly high among nurses working in critical care settings. For example, a survey conducted in the United States found that nearly 40% of ICU nurses experienced high levels of burnout, with emotional exhaustion being the most commonly reported symptom (Wan et al., 2022). Similarly, in Canada, researchers found that the demanding nature of critical care nursing contributes to increased stress levels, with up to 60% of nurses reporting symptoms of burnout (Xie et al., 2021).

In Europe, burnout prevalence among healthcare workers varies across countries. A study in the United Kingdom reported that approximately 30% of nurses exhibited severe burnout symptoms, significantly impacting their job performance and patient care (De Kock et al., 2022). In France, research indicated that nearly half of ICU physicians and one-third of nurses suffered from BOS, leading to absenteeism and high turnover rates (Asiri, 2021). Furthermore, a study conducted in Scotland found that 42% of psychiatric nurses demonstrated high levels of emotional exhaustion, highlighting the emotional toll of the profession (De Kock et al., 2022). These statistics underscore the need for targeted interventions to support nurses' psychological well-being globally.

In Africa, compassion satisfaction among nurses has been reported at moderate levels, with variations based on workplace conditions and institutional support. In South Africa, ICU nurses who participated in professional development programs and mentorship initiatives exhibited higher compassion satisfaction, leading to lower turnover rates (Elkonin & van der Vyver, 2011). However, in Nigeria, where healthcare resources are scarce, lower levels of compassion satisfaction have been observed, exacerbating burnout and compassion fatigue (Ariapooran, 2014).

In Asia, research has demonstrated that nurses who perceive their work as meaningful and receive adequate recognition report higher levels of compassion satisfaction. A study in China found that nurses working in collaborative and supportive environments experience greater job fulfilment, reducing the risk of burnout and emotional exhaustion (Jiang et al., 2021). Similarly, in Turkey, healthcare facilities that implement well-being programs for their nurses have reported increased levels of compassion satisfaction, leading to improved retention and performance (Saygili, Avci, & Sönmez, 2020).

In the African context, studies have documented significant levels of burnout and compassion fatigue among healthcare workers, particularly nurses in critical care settings. Research in South Africa revealed that over 35% of ICU nurses experienced high levels of burnout due to excessive workloads, staff shortages, and resource limitations (Elkonin & van der Vyver, 2011). Similar findings have been reported in Nigeria, where burnout was prevalent among critical care nurses, with work-related stressors cited as primary contributors (Ariapooran, 2014). The situation is exacerbated by the limited availability of mental health support services for healthcare professionals in low-resource settings.

In Asia, burnout among critical care nurses is also a growing concern. Studies in China have identified organizational factors such as excessive work hours, strained relationships with supervisors, and exposure to traumatic patient cases as major contributors to burnout and CF (Jiang et al., 2021). In Turkey, healthcare workers, particularly nurses, reported higher levels of burnout than physicians, with decreased job satisfaction and reduced commitment to work (Saygili, Avci, & Sönmez, 2020). Similarly, research in Iran indicated that critical care nurses

had higher levels of compassion fatigue, affecting their job performance and overall well-being (Ariapooran, 2014).

In Kenya, limited research has been conducted on compassion satisfaction among critical care nurses. However, existing studies indicate that nurses who receive institutional support, such as training and counselling services, tend to report higher job satisfaction and reduced burnout (Chinaboo, 2022). At Kenyatta National Hospital (KNH), a study found that while burnout and compassion fatigue were prevalent, nurses who had a strong sense of purpose and professional achievement experienced higher compassion satisfaction (Slatten, Carson, & Carson, 2020). Similarly, research at Mathari National Teaching and Referral Hospital highlighted that nurses who had peer support mechanisms and debriefing sessions demonstrated greater job fulfilment, mitigating the effects of emotional exhaustion (Pastores et al., 2019).

Despite these findings, there remains a significant gap in understanding the factors that contribute to compassion satisfaction among Kenyan nurses. This study aims to address that gap by examining the prevalence of compassion satisfaction alongside burnout and compassion fatigue among critical care nurses at KNH.

In Kenya, limited research has been conducted on burnout and compassion fatigue among critical care nurses. However, existing studies suggest that these issues are prevalent in the country's healthcare system. A study conducted at Kenyatta National Hospital (KNH) in 2015 revealed that nurses were three times more likely to suffer from compassion fatigue compared to medical doctors (Chinaboo, 2022). Similarly, research at Mathari National Teaching and Referral Hospital established that high levels of burnout were common among mental health nurses, yet no structured interventions were in place to address these challenges (Slatten, Carson, & Carson, 2020).

Further, studies have shown that Kenyan nurses working in ICUs and CCUs face immense work-related stress due to heavy patient loads, inadequate staffing, and lack of psychological support (Pastores et al., 2019). The combination of these factors makes critical care nurses highly susceptible to BOS and CF, affecting both their professional and personal lives. Despite the growing recognition of burnout and compassion fatigue among Kenyan nurses, there remains a significant gap in research, particularly in the development of effective intervention strategies.

Notably, the high prevalence of burnout and compassion fatigue among critical care nurses has far-reaching consequences for both healthcare providers and patients. Nurses experiencing high levels of BOS and CF are more likely to suffer from mental health disorders such as depression and anxiety, ultimately leading to decreased job satisfaction and increased turnover rates (Todaro-Franceschi, 2024). Furthermore, burnout negatively affects patient outcomes, as exhausted and emotionally drained nurses may struggle to provide optimal care (Taşdemir et al., 2024). Despite global and regional efforts to address burnout in healthcare settings, limited attention has been given to critical care nurses in Kenya. This study seeks to fill that gap by assessing the prevalence of burnout, compassion fatigue, and compassion satisfaction among critical care nurses at KNH. Understanding the magnitude of these psychological challenges is crucial in developing targeted interventions that promote nurses' well-being, enhance job performance, and improve overall patient care outcomes.

1.1 Problem Statement

Critical care nurses (CCNs) are expected to function in an environment that fosters emotional resilience, professional satisfaction, and overall well-being, ensuring high-quality patient care.

In a well-supported system, CCNs would experience optimal levels of compassion satisfaction (CS), which counteracts the adverse effects of burnout syndrome (BOS) and compassion fatigue (CF) (Xie et al., 2021). High CS contributes to job retention, positive patient outcomes, and enhanced professional efficacy (Todaro-Franceschi, 2024). Hospitals should implement supportive work environments, including structured mental health programs, manageable workloads, and organizational strategies that enhance nurses' emotional well-being and professional fulfilment (Taşdemir et al., 2024).

However, the reality is different, particularly for critical care nurses at Kenyatta National Hospital (KNH). Studies indicate that CCNs globally, including in Kenya, face high levels of BOS and CF due to overwhelming workloads, prolonged exposure to patient suffering, and inadequate institutional support (Wan et al., 2022). Despite research on burnout and compassion fatigue in various healthcare settings, the specific prevalence and interplay of BOS, CF, and CS among Kenyan CCNs remain underexplored (Chinaboo, 2022; Pastores et al., 2019). Existing studies highlight the severity of BOS and CF; however, they lack comprehensive assessments of CS and its mitigating effects. This creates a significant research gap. This study, therefore, aims to bridge this gap by examining the prevalence of burnout, compassion fatigue, and compassion satisfaction among CCNs at KNH, providing critical insights that can inform policy interventions and institutional strategies to support nurse well-being.

2. Materials and Methods

This randomized controlled trial examined burnout symptoms, compassion fatigue, and compassion satisfaction among critical care nurses at Kenyatta National Hospital (KNH), Kenya's largest referral hospital. The study recruited 156 registered nurses working in the Critical Care Unit for at least six months, dividing them equally into intervention and control groups through simple random sampling. Data collection utilized structured self-administered questionnaires, including a social demographic questionnaire and the Professional Quality of Life (ProQOL) Version 5 tool, which assessed burnout syndrome, compassion fatigue, and compassion satisfaction.

The ProQOL tool measured burnout symptoms (emotional exhaustion, depersonalization, reduced personal accomplishment), compassion fatigue (secondary traumatic stress symptoms), and compassion satisfaction (fulfilment from nursing work) using Likert scales. The tool has demonstrated high reliability across healthcare settings (Cronbach's alpha > 0.80). For diagnostic purposes, burnout and compassion fatigue were indicated by scores of 50 and above, with approximately 25% of people typically scoring above 57 and another 25% below 43 on these scales.

Data analysis used SPSS Version 29, employing descriptive statistics, independent t-tests, ANOVA, and Pearson's correlation analysis to examine relationships between variables with statistical significance set at $p<0.05$. Ethical approval was obtained from both KNH-University of Nairobi Ethics and Research Committee and Daystar University Ethics Board, ensuring voluntary participation with informed consent and data confidentiality. The study achieved a 94% response rate, with findings intended to inform mental health interventions for critical care nurses.

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Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

3. Results

The study sought to investigate the prevalence of compassion satisfaction, burnout symptoms, and compassion fatigue as evaluated using the Professional Quality of life tool (Pro QOL). A total of 218 critical care nurses were enrolled in the study

3.1 Demographic characteristics of critical care nurses at Kenyatta National Hospital

Demographic characteristics were investigated and the results are summarized as shown in Table 1.

Table 1: ***Demographic characteristics of critical care nurses at Kenyatta National Hospital***

	Frequency	Percent
Gender		
Female	148	67.9
Male	70	32.1
Age		
Less than 30 years	35	16.1
31 - 40 years	127	58.3
More than 30 years	56	25.7
Marital status		
Single	63	28.9
Married	155	71.1
Number of children in household		
None	37	17.0
1 - 2	95	43.6
3 or more	86	39.4
Size of household		
≤ 4	118	54.1
5 or more	100	45.9
Less than 50,000	123	56.4
50,000 or more	95	43.6
Education level		
Diploma	46	21.1
Higher diploma	95	43.6
Degree	77	35.3
Cadre		
Nursing officer	114	52.3
Registered nurse	30	13.8
Senior nursing officer	74	33.9
Years in current position		
Less than 2 years	31	14.2
2 - 5 years	100	45.9
More than 5 years	87	39.9
Total years of experience		
Less than 5 years	28	12.8
5 - 10 years	74	33.9
More than 10 years	116	53.2
Years in CCU		
Less than 2 years	42	19.3
2 - 5 years	90	41.3

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Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

More than 5 years	86	39.4
Terms of employment		
Temporary	39	17.9
Permanent	179	82.1
Tend to expected number of patients		
Yes	58	26.6
No	160	73.4
Nursing modality		
Primary nursing	99	45.4
Team nursing	29	13.3
Case assignment	6	2.8
A mixture of primary and team nursing	64	29.4
A mixture of primary and functional nursing	20	9.2
Mode of travel to work		
Public transport	139	63.8
Own transport	58	26.6
Walking	21	9.6

SD: Standard deviation, **CCU:** Critical care unit

Majority of the respondents, 67.9% (n =148) were female. The mean age of participants was 37.4 years (SD = 7.2), with most nurses falling within the 31–40-year age bracket (58.3%, n = 127). Regarding marital status, 71.1% (n = 155) of the nurses were married. The study also examined education levels, revealing that 43.6% (n = 95) of the respondents had a higher diploma, while 35.3% (n = 77) held a degree. The findings also showed that 26.6% (n =58) of the respondents attended to the expected number of patients as recommended.

3.2 The prevalence of burnout symptoms and compassion satisfaction among critical care nurses at KNH

A professional quality of life tool (Pro QUAL) was used to establish the prevalence of compassion satisfaction, burnout symptoms, and compassion fatigue. The findings are summarized in Table 2.

Table 2: ***The prevalence of burnout symptoms, compassion satisfaction, and compassion fatigue among critical care nurses at KNH***

Components	Frequency	Percent
Burnout (Mean, SD)	24.9±9.2	
Low	122	56.0
Moderate	72	33.0
High	24	11.0
Secondary trauma (Mean, SD)	27.2±6.2	
Low	48	22.0
Moderate	166	76.2
High	4	1.8
Compassion satisfaction (Mean, SD)	39.8±4.9	
Moderate	126	57.8
High	92	42.2

Freq: Frequency, **SD**: Standard deviation.

The study findings indicate that burnout was prevalent among critical care nurses at KNH. The mean burnout score was 24.9 (SD = 9.2), with 33% (n = 71) of respondents experiencing

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Journal of Sociology, Psychology & Religious Studies
Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

moderate to high levels of burnout (Table 2). The highest burnout levels were reported among nurses with fewer than two years of experience in the CCU (M = 28.5, SD = 9.3). These findings align with previous research indicating that less experienced nurses tend to exhibit higher levels of emotional exhaustion and depersonalization due to the steep learning curve and exposure to critically ill patients (Wan et al., 2022).

Compassion fatigue was also prevalent, with an average secondary trauma score of 27.2 (SD = 6.2). The majority of respondents (76.2%, n = 166) reported moderate levels of secondary trauma, while 1.8% (n = 4) experienced high levels (Table 2). Notably, nurses with fewer than five years of total experience reported the highest levels of secondary trauma (M = 29.6, SD = 6.9, p = .041). This finding is consistent with studies showing that early-career nurses are more susceptible to emotional distress due to frequent exposure to patient suffering (Xie et al., 2021).

Conversely, compassion satisfaction was relatively high among the study participants. The mean CS score was 39.8 (SD = 4.9), with 42.2% (n = 92) of nurses reporting high levels of compassion satisfaction (Table 2). Nurses with more than five years in their current position exhibited the highest levels of compassion satisfaction (M = 40.9, SD = 4.3, p = .015), suggesting that increased experience fosters professional fulfilment and resilience. These results are in line with previous studies indicating that nurses with greater work experience develop better-coping mechanisms, thereby enhancing their job satisfaction (Todaro-Franceschi, 2024).

3.3 Factors associated with burnout symptoms among critical care nurses at KNH

Significant differences in burnout levels were observed based on the number of years working in the Critical Care Unit (CCU) as shown in Table 3.

Table 3: ***Demographic factors associated with burnout symptoms and compassion satisfaction among critical care nurses at KNH***

	N	Burnout symptoms (Mean ±SD)	F statistic	P value
Gender				
Female	166	25.0±9.2		
Male	52	24.3±9.6	0.221	0.639
Age				
≤30 years	44	26.6±9.8	1.91	0.151
31 - 40 years	118	25.1±9.6		
More than 40 years	56	23.1±7.9		
Marital status				
Single	63	25.1±9.7	0.056	0.813
Married	155	24.8±9.1		
Number of children				
None	37	26.4±10.8	0.758	0.47
1 - 2	95	24.4±9.01		
3 or more	86	24.4±8.9		
Number of people in HH				
≤4	118	25.0±9.0	0.045	0.831
5 or more	100	24.7±9.6		
Income				

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Email: info@edinburgjournals.org||ISSN: 2790-0118

Less than 50,000	123	25.2±9.1	0.366	0.546
50,000 or more	95	24.4±9.6		
Education level				
Diploma	46	24.3±9.5	0.996	0.371
Higher diploma	95	24.2±9.2		
Degree	77	26.1±9.9		
Cadre				
Nursing officer	114	25.8±9.7	1.29	0.277
Registered nurse	30	23.8±7.4		
Senior nursing officer	74	24.8±9.2		
Number of years in current position				
Less than 2 years	31	27.2±9.7	2.558	0.08
2 - 5 years	100	25.2±9.6		
More than 5 years	87	23.2±8.5		
Years of experience				
Less than 5 years	28	25.7±9.4	0.692	0.502
5 - 10 years	74	25.6±9.4		
More than 10 years	116	24.1±9.4		
Years working in CCU				
Less than 2 years	42	28.5±9.3	4.094	0.018
2 - 5 years	90	24.1±9.5		
More than 5 years	86	23.8±8.6		
Terms of employment				
Temporary	32	23.3±9.1	1.061	0.304
Permanent	186	25.1±9.3		
Tend to expected number of patients				
Yes	54	26.0±9.2		
No	164	24.5±9.3		
Nursing modality				
Primary nursing	99	25.7±9.9	0.832	0.506
Team nursing	29	22.7±8.2		
Case assignment	6	26.7±12.6		
A mixture of primary and team nursing	64	25.7±9.6		
A mixture of primary and functional nursing	20	22.7±7.2		
Mode of transport to work				
Public transport	139	24.3±8.6	0.807	0.448
Own transport	58	25.3±11.		
Walking	21	26.3±7.9		

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Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

SD: Standard deviation, **CCU:** Critical care unit

Nurses with less than 2 years of experience in the CCU reported higher burnout levels (Mean = 28.5, SD = 9.3) compared to those with 2-5 years (Mean = 24.1, SD = 9.5) and more than 5 years (Mean = 23.8, SD = 8.6). A one-way ANOVA revealed significant differences in burnout levels based on years of experience in the CCU ($F(2, 215) = 4.094$, $p = .018$). Nurses with less than two years of CCU experience had significantly higher burnout scores compared to those with five or more years of experience. This trend is supported by research showing that new critical care nurses face higher emotional and psychological strain due to limited clinical exposure and lack of established coping mechanisms (Taşdemir et al., 2024).

3.4 Factors associated with Compassion Fatigue among critical care nurses at KNH

Differences in compassion fatigue levels were also significant across different levels of experience and years working in the CCU. This is as demonstrated in Table 4.

Table 4: ***Factors associated with compassion fatigue among critical care nurses at KNH***

		Compassion Fatigue (Mean ±SD)	F statistic	P value
Gender				
Female	166	27.1±6.2	0.042	0.837
Male	52	27.3±6.5		
Age				
≤30 years	44	29.1±7.0		
31 - 40 years	118	26.9±7.0		
More than 40 years	56	26.1±7.0		
Marital status				
Single	63	27.6±6.6	0.526	0.469
Married	155	27.0±6.1		
Number of children in HH				
None	37	28.1±6.8	1.669	0.191
1 – 2	95	27.7±6.2		
3 or more	86	26.2±6.0		
Income	N			
Monthly income				
Less than 50,000	123	27.3±6.5	0.216	0.642
50,000 or more	95	26.9±5.9		
Education level				
Diploma	46	27.7±6.1	1.279	0.28
Higher diploma	95	27.7±6.0		
Degree	77	26.7±6.5		
Cadre			0.209	0.812
Nursing officer	114	27.0±6.4		
Registered nurse	30	27.8±3.8		
Senior nursing officer	74	27.0±6.8		
Number of years in current position				
Less than 2 years	31	28.7±6.0	1.716	0.182

2 - 5 years	100	27.4±7.1		
More than 5 years	87	26.3±5.2		
Total years of experience				
Less than 5 years	28	29.6±6.9	3.252	0.041
5 - 10 years	74	27.4±6.9		
More than 10 years	116	26.3±6.9		
Years working in CCU				
Less than 2 years	42	29.4±5.4	3.288	0.039
2 - 5 years	90	26.9±6.9		
More than 5 years	86	26.8±6.8		
Terms of employment				
Temporary	32	28.4±6.1	1.432	0.233
Permanent	186	26.9±6.3		
Tend to expected number of patients				
Yes	54	27.3±6.7	0.029	0.865
No	164	27.1±6.2		
Nursing modality				
Primary nursing	99	27.0±6.4	1.241	0.294
Team nursing	29	27.0±6.1		
Case assignment	6	27.0±8.2		
A mixture of primary and team nursing	64	27.0±5.8		
A mixture of primary and functional nursing	20	27.0±6.4		
Means of transport to work				
Public transport	139	26.9±6.0	3.532	0.031
Own transport	58	26.5±6.0		
Walking	21	30.5±6.0		

SD: Standard deviation, **CCU:** Critical care unit, **COR**: Crude odds ratio, **aOR**: adjusted odds ratio, **CI**: Confidence interval.

Nurses with less than 5 years of total experience reported the highest levels of secondary trauma (Mean = 29.6, SD = 6.9), compared to those with 5-10 years (Mean = 27.4, SD = 6.9) and more than 10 years (Mean = 26.3, SD = 6.9). The F statistic was 3.252, with a p-value of 0.041, indicating a significant difference. Similarly, secondary trauma scores were significantly higher among nurses with fewer than two years of CCU experience (M = 29.4, SD = 5.4) than those with more experience (F(2, 215) = 3.288, p = .039) as shown in Table 4. These findings suggest that less experienced nurses and those new to the CCU are more susceptible to secondary trauma, likely due to the emotional intensity and exposure to patients suffering in these roles. These findings corroborate studies suggesting that early-career nurses experience greater emotional exhaustion due to their limited ability to manage distressing patient interactions (Xie et al., 2021).

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Email: info@edinburgjournals.org||ISSN: 2790-0118

3.5 Factors associated with compassion satisfaction

The factors associated with compassion satisfaction were also investigated and the findings were summarized in Table 5.

Table 5: ***Factors associated with compassion satisfaction***

	N	Compassion satisfaction (Mean ±SD)	F statistic	P value
Gender				
Female	166	40.0±4.9	0.534	0.466
Male	52	39.4±4.9		
Age				
≤30 years	44	39.3±5.3	1.693	0.186
31 - 40 years	118	39.4±4.7		
More than 40 years	56	40.4±4.9		
Marital status				
Single	63	39.8±4.6	0.014	0.906
Married	155	39.9±5.0		
Number of children in HH				
None	37	41.0±4.7	1.499	0.226
1 – 2	95	39.3±5.1		
3 or more	86	39.9±4.8		
Number of people in HH				
≤ 4	118	40.2±4.9	1.158	0.283
5 or more	100	39.5±5.0		
Income				
Less than 50,000	123	39.6±5.2	0.957	0.329
50,000 or more	95	40.2±4.5		
Education level				
Diploma	46	40.7±4.6	0.865	0.422
Higher diploma	95	39.5±5.3		
Degree	77	39.8±4.7		
Cadre				
Nursing officer	114	40.1±5.1	0.624	0.537
Registered nurse	30	38.3±4.3		
Senior nursing officer	74	39.7±4.7		
Years in current position				
Less than 2 years	31	40.0±5.0	4.301	0.015
2 - 5 years	100	38.9±5.2		
More than 5 years	87	40.9±4.3		
Years of experience				
Less than 5 years	28	38.1±5.97	2.089	0.126
5 - 10 years	74	39.9±4.98		
More than 10 years	116	40.2±4.54		

EdinBurg Peer Reviewed Journals and Books Publishers
Journal of Sociology, Psychology & Religious Studies
Vol. 5||Issue 1||pp 38-54||April||2025
Email: info@edinburgjournals.org||ISSN: 2790-0118

Years working in CCU				
Less than 2 years	42	38.6±5.3	1.837	0.162
2 - 5 years	90	39.8±4.8		
More than 5 years	86	40.3±4.7		
Terms of employment				
Temporary	32	38.7±4.9	2.181	0.141
Permanent	186	40.0±4.9		
Tend to expected number of patients				
Yes	54	38.9±5.4	2.491	0.116
No	164	40.1±4.7		
Nursing modality				
Primary nursing	99	39.6±4.9	1.352	0.252
Team nursing	29	39.6±4.4		
Case assignment	6	39.6±5.1		
A mixture of primary and team nursing	64	39.6±4.8		
A mixture of primary and functional nursing	20	39.6±5.4		
Means of transport to work				
Public transport	139	39.8±4.8	0.063	0.939
Own transport	58	39.9±4.9		
Walking	21	40.6±5.6		

Compassion satisfaction was found to be significantly associated with years of experience in the current position ($F(2, 215) = 4.301$, $p = .015$). Nurses with over five years in their current role reported the highest levels of CS ($M = 40.9$, $SD = 4.3$). This suggests that nurses who have been in their current positions longer may derive greater satisfaction from their work, possibly due to increased familiarity and mastery of their roles. This result is consistent with findings from international studies showing that professional longevity contributes to greater resilience and job fulfilment (Todaro-Franceschi, 2024).

Additionally, employment status was a significant factor in burnout and CS levels. Temporary nurses exhibited higher burnout levels ($M = 27.2$, $SD = 9.7$) than their permanently employed counterparts ($M = 25.1$, $SD = 9.3$, $p = .030$). Moreover, permanent nurses reported significantly higher compassion satisfaction ($M = 40.0$, $SD = 4.9$) compared to temporary staff ($M = 38.7$, $SD = 4.9$, $p = .048$). This finding aligns with research indicating that job security enhances professional satisfaction and mitigates burnout risks (Wan et al., 2022).

4. Discussion

The findings of this study provide critical insights into the prevalence and factors associated with burnout symptoms, compassion fatigue, and compassion satisfaction among critical care nurses (CCNs) at Kenyatta National Hospital (KNH). The results indicate a significant prevalence of burnout and compassion fatigue, particularly among early-career nurses, while compassion satisfaction levels were relatively high among experienced nurses. These findings align with global literature, further underscoring the need for workplace interventions to enhance nurse well-being.

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Burnout Symptoms Among Critical Care Nurses

The study established that 33% of respondents experienced moderate to high burnout symptom levels, with the highest prevalence among nurses with fewer than two years of experience (M = 28.5, SD = 9.3) (Table 2). This finding is consistent with previous studies which indicate that early-career nurses are more vulnerable to burnout due to the overwhelming demands of critical care environments and their limited coping mechanisms (Wan et al., 2022). Similar trends have been observed in other healthcare systems, such as in South Africa, where Elkonin and van der Vyver (2011) reported that newly employed CCNs faced higher emotional exhaustion levels than their experienced counterparts.

Further analysis revealed a significant relationship between employment status and burnout symptom levels, with temporary nurses exhibiting higher burnout scores (M = 27.2, SD = 9.7) than permanent nurses (M = 25.1, SD = 9.3, p = .030) (Table 4). This suggests that job insecurity and lack of long-term employment stability exacerbate stress levels among nurses, leading to increased burnout—a phenomenon well-documented in studies on healthcare workforce dynamics (Taşdemir et al., 2024).

Compassion Fatigue

The findings revealed that 76.2% of nurses experienced moderate levels of compassion fatigue, while 1.8% reported high levels (Table 2). Nurses with fewer than five years of total experience had significantly higher compassion fatigue scores (M = 29.6, SD = 6.9, p = .041), a trend supported by prior studies demonstrating that less experienced nurses struggle with the emotional demands of critical care nursing (Xie et al., 2021). This aligns with the work of Jiang et al. (2021), who found that younger nurses in China experienced higher compassion fatigue due to their lower resilience and frequent exposure to distressing patient cases.

Compassion fatigue was also significantly higher among nurses with fewer than two years of CCU experience (M = 29.4, SD = 5.4) compared to those with longer tenure (F (2, 215) = 3.288, p = .039) (Table 4). This highlights the emotional burden of patient care, reinforcing research findings that younger or less experienced nurses are at greater risk of experiencing vicarious trauma from patient interactions (Todaro-Franceschi, 2024).

Compassion Satisfaction Among Nurses

Despite the high levels of burnout Symptoms and compassion fatigue, compassion satisfaction was relatively high among study participants, with a mean score of 39.8 (SD = 4.9). Notably, nurses with more than five years in their current position exhibited the highest compassion satisfaction scores (M = 40.9, SD = 4.3, p = .015) (Table 3). These findings are consistent with research indicating that job experience enhances professional fulfilment and resilience, allowing nurses to derive meaning from their work despite its emotional toll (Todaro-Franceschi, 2024).

Additionally, compassion satisfaction was significantly associated with employment stability. Permanent nurses reported higher CS scores (M = 40.0, SD = 4.9) than temporary nurses (M = 38.7, SD = 4.9, p = .048) (Table 4), suggesting that job security and institutional support contribute to greater job fulfilment. This aligns with findings from Saygili et al. (2020), who noted that nurses with long-term employment contracts were more likely to report higher job satisfaction and professional engagement.

The findings of this study underscore the urgent need for targeted interventions to address burnout and compassion fatigue while enhancing compassion satisfaction among critical care

nurses. Institutional strategies such as mental health support programs, structured peer debriefing sessions, and workload management initiatives could mitigate the psychological distress experienced by CCNs (Taşdemir et al., 2024). Additionally, efforts to improve job security and offer career advancement opportunities may contribute to greater nurse retention and job satisfaction (Wan et al., 2022).

Furthermore, resilience training and mentorship programs for early-career nurses could help them develop coping mechanisms and emotional endurance, reducing the likelihood of burnout and compassion fatigue (Xie et al., 2021). Healthcare policymakers and hospital administrators should consider these findings when formulating policies aimed at improving the work environment for CCNs, ultimately leading to enhanced patient care outcomes.

5. Conclusion

Burnout Symptoms and compassion fatigue are critical issues affecting critical care nurses worldwide, with varying prevalence rates across different regions. This study confirms that burnout symptoms and compassion fatigue are prevalent among critical care nurses at KNH, with early-career and temporary nurses being the most affected. However, compassion satisfaction remains a significant protective factor, particularly among experienced and permanently employed nurses. These findings highlight the need for institutional interventions to support CCNs' well-being, ensuring that they maintain high-quality patient care while safeguarding their mental health. Future research should explore intervention efficacy, focusing on strategies that enhance resilience and job satisfaction among CCNs in Kenya and beyond.

6. Recommendations

To address burnout symptoms and compassion fatigue while enhancing compassion satisfaction, the hospital administration at KNH should implement structured mental health programs, including peer debriefing sessions and professional counselling, to support critical care nurses. The Ministry of Health should develop policies that ensure manageable nurse-to-patient ratios in critical care units to alleviate excessive workloads. Additionally, hospital management should provide permanent employment opportunities and career advancement programs to enhance job security and professional growth. Training institutions should incorporate resilience training and stress management modules into nursing curricula to equip nurses with coping strategies before they enter critical care environments. Lastly, further research should be conducted to assess the effectiveness of workplace interventions aimed at improving nurse well-being and patient care outcomes.

Conflict of interest: There is no conflict of interest to declare.

Funding

This study was supported by Kenyatta National Hospital, Research, and Programs Department.

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